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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/546,962	04/11/2000	Peter Merchant	TELNP202USA	4166

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EXAMINER

LEE, SEUNG H

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 10/31/2006

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/546,962
Filing Date: April 11, 2000
Appellant(s): MERCHANT, PETER

Himanshu S. Amin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 26 August 2006 appealing from the Office action mailed 07 April 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,053,409	Brobst et al.	4-2000
5,710,418	Tawara	1-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6, 8-10, 12-18, 20, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brobst et al (US 6,053,409) (hereinafter referred to as 'Brobst') in view of Tawara (US 5,710,418).

Re claims 1, 3-6, 8-10, 12, 15, 16, 18, 20, 21, and 23; A system for scanning a barcode comprising a light source (122), a piezoelectric material reflector (124) having an arcuate reflective surface with a variable shape generally radial, a shape controlling system (260) for controlling the shape of reflector according to the voltage or power source, a beam expander (129) wherein the reflector reflecting a light beam from the light source onto the beam expander, the beam expander reflecting the light beam onto the target, and the shape controlling system varying the shape of the reflector (see Fig. 5-8; col. 5, lines 5- 60), a housing having horizontal top and bottom sides, vertical left and right sides, and an aperture in one of the sides(see Fig. 11; col. 6, line 44 – col. 8, line 3), the alternative beam expander (80 and 100) is shown in figures 3 and 4 having the forms of flat facet (104) and convex facets (102' and 102'') for creating different focal points (see figs. 3 and 4; col. 3, lines 52- col. 4, line 47).

However, Brobst fairly suggest that the bema expander has a cylindrical reflective outer surface.

Tawara teaches an optical barcode reader comprising a beam expander such as a circular cone (44) having a mirror outer surface for reflecting scanning beam onto the target wherein a cylindrical mirror can be used alternatively for reflecting scanning beam

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in which the outer surface of the cylindrical mirror comprises a polished round pillar (not shown) (see figs. 5-6; col. 4, line 41-col. 5, line 45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the teachings of Tawara (i.e., cylindrical body for reflecting the scanning beam) into the system of Brobst in order to provide an simple and inexpensive reader by projecting a line laser beam for scanning barcodes.

Re claim 2: A photo sensor (132 and 154) generates an electrical representative of reflected light beam from the target (see Fig. 5, 5A; col. 4, lines 48-67).

Re claims 13, and 14: A conversion and interface system receiving the electrical signal from the photo sensor and converting the electrical signal to a digital code (see col. 3, lines 29- 45).

Re claim 17: The reflector includes a piezoelectric material having a metal electrode layer (262) and a piezoceramic layer (264) which serves as a two electrode wherein the shape of reflector varies according to the voltage across the electrodes (see Fig. 6, 7; col. 5, lines 25-42).

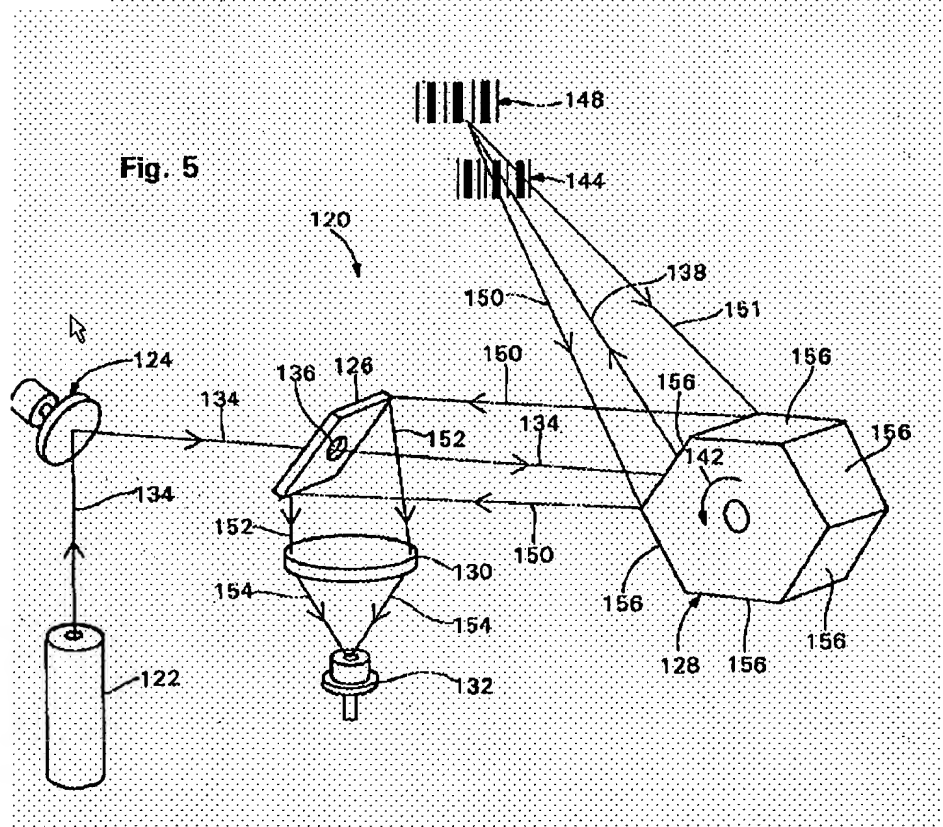
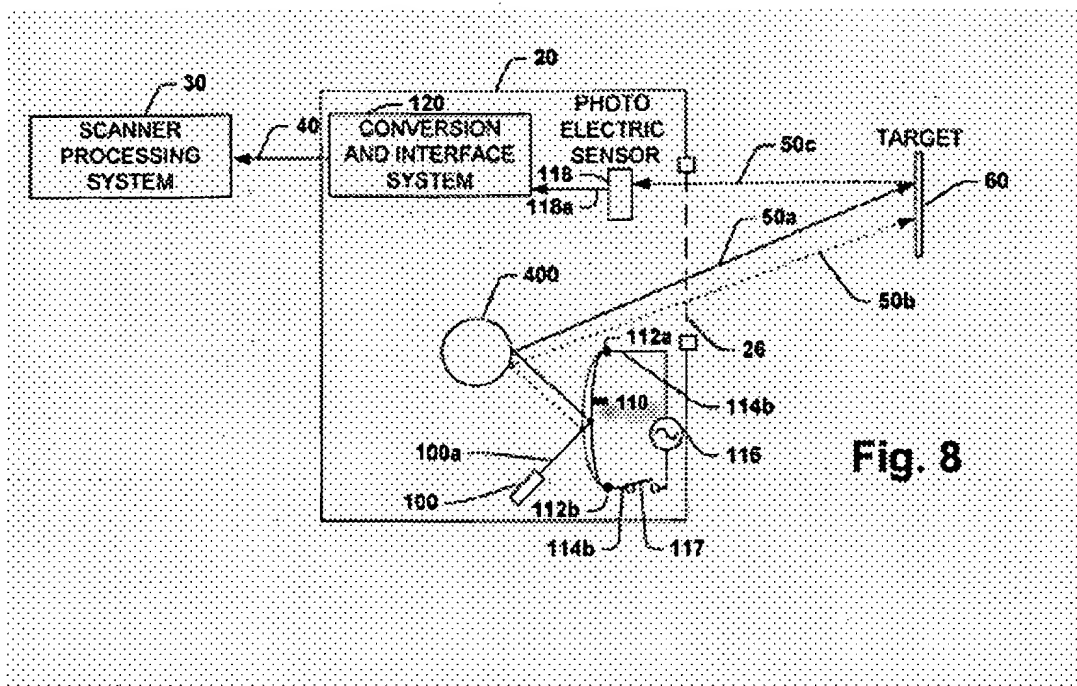
(10) Response to Argument

The examiner respectfully disagrees with appellant's comments and arguments as stated in the "argument" section of the Appeal Brief, for following reasons:

Appellant contents that ".... Thus, the primary document provides a deformable mirror assembly that focuses a beam at disparate focal points wherein a scanning beam is produced by either a rotating polygonal scan mirror or an oscillating mirror. In

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contrast, appellant's claimed invention provides a shape controlling system that selectively varies the shape of a reflector having an arcuate reflective surface whereby a light beam from a light source can be projected light beam onto a target....It is submitted that Brobst et al. does not teach or suggest this aspect of the recited claim" (see page 6, lines 3-12), the examiner respectfully agrees with the appellant that the deformable mirror assembly such as a piezoelectric material reflector (124) is used for varying focal points by shaping the piezoelectric material therewith and the scanning beam is produced by either a rotating polygon scan mirror or the oscillating mirror in which the teachings of Brobst et al. is almost identical to that of the claimed invention, that is, Brobst et al. also teaches the polygon scan mirror or the oscillating mirror serving as a beam expander for reflecting the light beam onto a target wherein the light beam is provided via the deformable mirror assembly. For the purpose of comparison, the examiner hereby provides drawings of claimed invention (figure 8 with a reference number 110 added for indicating the piezoelectric material) and a figure 5 of Brobst et al. below;



The claimed invention comprises the beam expander (400) for reflecting the light beam (50a) generated by a light source (100) and reflected by the reflector such as piezoelectric material (110), whereas Brobst et al. discloses a polygon scan mirror (128) for reflecting the light/scanning beam (138) generated by a light source (122) and reflected by the deformable mirror assembly (124). Therefore, Brobst et al. discloses the claimed invention.

The appellant contents that "...Tawara does not teach or suggest the shape controlling system selectively varying the shape of the reflector, whereby the second portion scans across at least a portion of the target." (see page 6, line 24-26), the examiner respectfully agrees with the appellant that Tawara does not teach the shape controlling system and the second portion of the light beam scans a portion of the target. However, such teachings are taught/shown by Brobst et al. wherein Brobst et al. discloses the deformable mirror assembly (124) serving as the shape controlling system for varying the shape of the reflector as shown in figure 6 and the polygon scan mirror or the oscillating scan mirror producing the second portion of the light beam (138) that scans the target.

The appellant contents that "While this may be desirable, the reality is that this would prove impractical in this instance.....Appellant's representative conjectures that if generation of such a line beam were to be combined with the apparatus disclosed in Brobst et al. that the purpose of Brobst et al. (obtaining multiple focal points) would be defeated." (see page 6, line 31- page 7, line 7), the examiner respectfully disagrees with the appellant wherein Brobst et al. discloses that a piezoelectric deformable mirror can

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be located between the light source and a flat faceted scan mirror for increasing the depth of field for scanning or providing multiple focal points (see Abstract) and the scanning beam (138) is always focused on the target using particular facet such as the oscillating mirror as shown in figure 5A.

The appellant contends that "....the Examiner has employed an insidious 20/20 hindsight road map based analysis to impermissibly provide the missing teaching of the cited document." (see page 7, line 14-16), the examiner respectfully disagrees with the appellant wherein Tawara clearly discloses that the optical image reader can be produced with "an exceptionally simple and inexpensive" (col.4, lines 41-44) using a circular cone (44) with a mirror outer surface (45) as shown in figure 5 and 6 wherein the circular cone can be substituted with a cylindrical mirror. Therefore, it would have been an obvious to adapt the cylindrical mirror as suggested by Tawara to substitute the polygonal scan mirror or the oscillating scan mirror of Brobst et al. to produce the barcode reader simply and inexpensively.


(11) Related Proceeding(s) Appendix

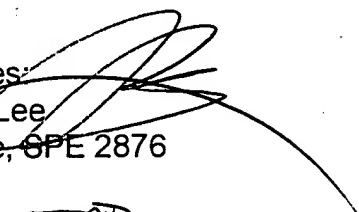
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.


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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

SL 
October 17, 2006

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